

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,704	11/07/2001	Bernd J.W. Mathiske	SUN-P6316-RSH	5646

22835 7590 08/05/2004

PARK, VAUGHAN & FLEMING LLP
508 SECOND STREET
SUITE 201
DAVIS, CA 95616

EXAMINER

MANOSKEY, JOSEPH D

ART UNIT	PAPER NUMBER
----------	--------------

2113

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,704

Applicant(s)

MATHISKE ET AL.

Examiner

Joseph Manoskey

Art Unit

2113

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

Claim Objections

2. Claims 1, 10, and 19 are objected to because of the following informalities:

The Applicant uses the term "pre-linking" which occurs during run-time and after compiling and linking, in claims 1, 10, and 19. The Examiner interprets "pre-linking" to mean "dynamic linking" and compiling and linking to mean compiling and static linking. It is suggested that applicant change "pre-linking" to "dynamic linking".

The term "compiled" in claims 1, 10, and 19. The Examiner notes that this is believed to be a typographical error and should instead read "compiled", and will be interpreted as such for the purposes of further examination.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Litzkow et al., "Checkpoint and Migration of UNIX Processes in the Condor Distributed Processing System", hereinafter referred to as "Litzkow".

5. Referring to claims 1, 10, and 19, Litzkow teaches checkpointing using a library that is re-linked but not re-compiled to include this library, this is interpreted as pre-linking a library into the application during a run-time invocation of the application, wherein the run-time invocation occurs after the application has been compiled and linked (See page 1, section 1). Litzkow also teaches providing new versions of system calls to record information from the calls, this is interpreted as the library being an interceptor library (See page 5, section 3.4.1). Litzkow discloses new versions of calls that have the same as the calls by the application, thus intercept the function calls, and record the information, this is interpreted as intercepting the function calls and recording parameters to create a checkpoint (See page 5, section 3.4.1). The new functions then call the actual routine, thus making the function call (See page 5, section 3.4.1). Finally the interception is done using new versions of the function calls they receive the return value of the actual function call and then return it, thus forwarding the result of the function call back to the application (See page 5, section 3.4.1).

6. Referring to claims 2, 11 and 20, Litzkow teaches the application being interrupted, this interpreted as stopping the application (See page 7, section 4). Litzkow also teaches the checkpoint being saved to stable storage using the file system, this is interpreted as retrieving the recorded parameters and saving the checkpoint data to secondary storage (See page 1, section 2). Finally the user code resumes where it left off, thus “resuming the application” (See page 7, section 4).

7. Referring to claims 3, 12, and 21, Litzkow discloses restoring the process’s state, this is interpreted as using the checkpoint to restore the application (See page 2, section 2).

8. Referring to claims 4, 13, and 22, Litzkow teaches the checkpoints being stored in stable storage, this is interpreted as saving the checkpoint data to a persistent storage (See page 1, section 2).

9. Referring to claims 5, 14, and 23, Litzkow discloses saving the checkpoint data in stable storage using the file system, this is interpreted as saving the checkpoint data in a file system, or a database (See page 1, section 2).

10. Referring to claims 6, 15, and 24, Litzkow teaches using a “syscall()” to call the actual function, this is interpreted as making the function call involves referencing the function through a function pointer (See page 6, section 3.4.1).

11. Referring to claims 7, 16, and 25, Litzkow discloses saving the stack and data in the checkpoint file, this is interpreted as recording results of the function call to facilitate creating a checkpoint that includes information about the results of the function call (See page 7, section 4).

12. Referring to claims 8, 17, and 26, Litzkow teaches the function calls including system calls and library routines, "lib calls" (See page 5, section 3.4.1).

13. Referring to claims 9, 18, and 27, Litzkow teaches the checkpoint file containing pathname of the file (See page 7, section 3.4). Litzkow also discloses stack, data, and shared library information in the checkpoint, this is interpreted as thread flags and timer-thread relationships (See page 7, section 4).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following are closely related examples of checkpointing systems.

U.S. Patent 6,282,703 to Meth et al.

U.S. Patent 6,336,215 to Oberhauser et al.

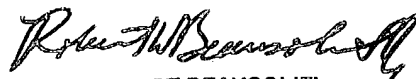
U.S. Patent 6,631,480 to Zeigler et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (703) 308-5466. The examiner can normally be reached on Mon.-Fri. (8am to 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM
August 2, 2004


ROBERT BEAUSOLIEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100